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Evaluation of Reading Comprehension Gains as Measured by DIBELS Retell Fluency

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EVALUATION OF READING COMPREHENSION GAINS AS MEASURED BY DIBELS RETELL FLUENCY

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ABSTRACT

The purpose of this study was to evaluate the effectiveness of individual reading instruction on reading comprehension gains at the 2010 Marshall University Graduate College Summer Enrichment Program. DIBELS Retell Fluency scores were utilized to measure the effect of one-to-one tutoring across three variables: small-group reading instruction only versus small-group with individual instruction added, struggling versus non-struggling, and younger versus older readers. A 2 (group) x 2 (ability) x 2 (age) between-subjects ANCOVA with repeated-measures was calculated to examine the main and interaction effects of individual tutoring, reading ability, and age on Retell Fluency scores, covarying out the effect of hours of treatment. A significant difference occurred between the Retell Fluency measure of children who received small-group instruction only and those who received individual reading instruction in addition to small-group instruction. Findings of this program evaluation demonstrate the value of pull-out, individualized, reading interventions.

Review of Literature

Importance of Reading

Teaching children to read is a challenging responsibility, and effective reading instruction is more important now than ever. Literacy is an essential skill in today's interconnected word of advancing technology. Social progress and economic growth depend on an educated population. The inadequacies of America's schools are being brought to light and current national and state legislation aim to ensure that all students learn and succeed in school. Scientists now estimate that 95% of children can be taught to read at a level constrained only by their reasoning and listening comprehension abilities (Fletcher & Lyon, 1998). Yet, too many students in schools today continue to struggle in learning to read, and unfortunately too many will never master this important skill. In fact, in 1998 38% of fourth graders performed below basic on the National Assessment of Educational Progress Report (NAEP; US Department of Education, 1998).

Reading scores continue to worsen, especially among teenagers and young males. Young Americans are also reading less. On average, Americans ages 15 to 24 spend nearly two hours a day watching TV, and only seven minutes reading. These declines in reading are proving to have civic, social, and economic implications. For example, nearly two-thirds of employers ranked reading comprehension 'very important' for high school graduates, yet 38% consider most high school graduates deficient in this basic skill. In addition, literary readers are more likely than non-readers to engage in positive civic and individual activities such as volunteering, attending cultural events, and exercising (Gifford, 2007).

Reading Instruction

The National Reading Panel Report summarized several decades of scientific research that clearly shows that effective reading instruction addresses five critical areas: Phonemic awareness, phonics, fluency, vocabulary, and comprehension. These five areas were incorporated into the No Child Left Behind Act and the Reading First initiative as essential components of effective reading instruction (National Institute of Child Health and Human Development, 2000).

Students use their knowledge about the phonological system, including how to manipulate sounds in spoken words and apply phoneme-grapheme correspondences and phonics rules, as they read. They become fluent readers once they recognize most words automatically and read quickly with expression. Fluent readers devote most of their cognitive resources to comprehension. Comprehension involves a combination of text factors to understand what they're reading. Readers with good comprehension skills can predict, connect, monitor, repair and use their knowledge of genres, organizational patterns, and literary devices to create meaning (Tompkins, 2008).

There are many approaches to teaching these five essential components, but research has revealed that not all methods are equally effective. The most reliable and effective approach is *systematic and explicit instruction*. Systematic instruction implies that skills and concepts are taught in a planned, logically progressive sequence. Lessons have clearly defined objectives and multiple practice activities are scheduled to help students master and retain new skills. Assessments are used in a timely fashion to monitor skill acquisition as well as students' ability to apply new skills, retain them over

time, and use them independently. Explicit instruction involved directing student attention toward specific learning in a highly structured environment. It is teaching that is focused on producing specific learning outcomes ("A closer look," 2004).

Reading Interventions

In light of the recent rise in popularity and awareness of Response to Intervention, or RTI, in schools the term "intervention" has become a buzzword. A reading intervention is a program or instruction that is provided to supplement an existing literacy curriculum. The goal is to increase reading levels by giving the student additional instructional time to receive more intensive instruction in his or her weaker areas.

So, what makes an intervention effective? In the last decade researchers have identified critical components of effective reading interventions. The critical components are "(a) the intensity, duration, and supportiveness of intervention; (b) the timing of intervention; (c) student-teacher ratio, (d) requisite knowledge level of intervention teachers, (e) and the content of the intervention" (Foorman, Brier, & Fletcher, 2003, p. 629). They argue that early intervention is more effective than later intervention because the later the intervention is implemented it must be much more intensive and longer-lasting to be effective. The authors also believe that early intervention starts with classroom instruction that prevents reading difficulties with explicit instruction in areas such as phonemic awareness and with reading for meaning and opportunities to practice reading and writing.

Evidence-based reading instruction and intervention. Evidence-based reading instruction means that a program or collection of instructional practices has been proven

to be successful and that they are valid and reliable. With evidence-based or research-based instruction there is sufficient evidence to suggest that when the program is implemented correctly, students can be expected to make adequate gains in reading achievement (Bean, Olness, Walker-Dalhouse, Anders, & Rasinski, 2002).

Bursuck and Blanks (2010) describe some broad research-based interventions that can be modified and adapted to help students in all three tiers. First, strategies should be conspicuous, or explicit. For example, when teaching phonemic segmentation teachers could say the word followed by articulating each individual sound. Another intervention that can be incorporated into all tiers is mediated scaffolding. Instructional guidance provided by teachers, materials or peers offers additional support when a student is learning a new or difficult skill. This arrangement makes sense within the RTI model, as the students in the more intensive tiers may need the most support for a longer duration. Judicious review is a broad intervention that helps students retain what they have learned and read. Reading instruction should incorporate opportunities to recall and apply previously taught skills. In judicious review, students must perform the skill automatically and correctly. Reviews should be "cumulative and integrate previously learned and less complex information into more complex tasks over time" (Bursuck and Blanks, 2010, p. 425).

It is important to keep in mind that no matter how effective an intervention has been shown to be, not every intervention will help every student. For this reason, frequent progress monitoring is key. If a student is not responding to one intervention, a new one should be implemented that focuses on the readers' specific weaknesses.

Reading Comprehension

Reading comprehension requires the interaction of several component processes that integrate information from the page that the student is reading with his or her background knowledge and experience. Comprehension is a complex skill that depends on a variety of factors, contexts, and reading goals. Before a student can understand the meaning of text, he or she must first be able to decode the individual words to an adequate level of accuracy and automaticity (Paris & Stahl, 2005). The information processing model of comprehension suggests that decoding and comprehension both require cognitive resources, and the more processing capacity devoted to decoding, the less capacity available for understanding what has been decoded (Roberts, 2005).

There are several comprehension strategies that have been shown to be effective: (a) using words or imagery to elaborate the content, (b) paraphrasing and summarizing in one's own words to clarify the content, (c) consciously seeking relations between new content and existing knowledge, and (d) consciously monitoring one's ongoing comprehension. Those with good comprehension are able to actively construct meaning during reading and link the text with prior knowledge and experience (Paris, & Stahl, 2005). Some essential strategies for teaching reading comprehension are clarification, prediction, summarizing, questioning, and visualization. Teachers should provide explicit instruction of these strategies as well as be skilled in how to ask strategic questions (Krieg, 2009).

Assessing reading comprehension can be a difficult task because unlike other reading skills such as fluency or vocabulary, the processes involved cannot be directly

observed and are influenced by a multitude of underlying actions. The most widely used curriculum-based measure of reading competence is oral reading flunecy. It is generally defined as the number of words read correctly in one minute. Oral reading fluency is a reliable and remarkably efficient predictor of elementary-school students' scores on more traditional measures of reading ability. Oral reading fluency is not designed as a measure of comprehension, although it is highly correlated with comprehension scores. Given the effectiveness of oral reading fluency, it is reasonable to question the need for an additional measure, but there are several reasons why retell fluency measure is important and often used (Roberts, 2005).

DIBELS Retell Fluency (RTF)

Retell Fluency (RTF) is intended to provide a comprehension check for the Oral Reading Fluency assessment. One purpose of the RTF measure is to prevent speed-reading without understanding the material. The RTF also provides an explicit link to the components of the National Reading Panel report that corresponds to the comprehension measure. Finally, the RTF addresses concerns with the face validity of oral reading fluency as a measure of comprehension (DIBELS oral reading, 2010).

One recent piece of research looked at the reliability and validity of a fluency-based measure of reading comprehension. School psychology graduate students administered DIBLES Retell Fluency, Oral Reading Fluency, and WJ-III Achievement Reading Comprehension measure to fourth-grade students. The examiners scored each measure as it was administered (real-time) and recorded each administration to later be scored by an independent examiner (recorded score). First, their results indicated a lack of consistency between real time and recorded DIBELS retell fluency scores, meaning

that the two examiners scored the same student's responses quite differently. Second, they found a low correlation between retell fluency and reading comprehension scores. This finding suggests that one minute of reading and one minute of retell may not accurately assess reading comprehension. Overall, this study implies that retell-fluency tasks may not be the best indicator of reading comprehension among fourth-graders and the authors call for further studies to examine the appropriateness of the retell fluency measure (Bellinger & DiPerna, 2011).

Response to Intervention

Effective interventions are just one of the key components of the RTI model. According to the National Center on Response to Intervention (2010), RTI integrates assessment and intervention in a multi-level prevention system to help maximize student achievement and to reduce behavioral problems. There are three levels, or tiers, in the RTI model. Tier I can be considered general education. It consists of high-quality core instruction that meets the needs of most students. Students move to Tier II if progress monitoring reveals that they are failing to make adequate progress receiving Tier I instruction alone. In Tier II this group of students receives additional intensive instruction which includes evidence-based interventions of moderate intensity that address the learning challenges of most at-risk students (National Center on Response to Intervention, 2010). Tier III involves specialized instruction and assessment. Students in Tier III have shown minimal response to Tier II interventions. There is not yet universal agreement about how Tier III is defined. Some schools define it as Special Education, and those students who receive services at this level have been evaluated and identified as

needing specially designed instruction. While in other schools, Tier III interventions are more individualized and intensive than those in Tier II.

RTI has been shown to be a powerful approach to assist students who are struggling academically and also to identify those students who may be learning disabled, but there is little research available to show whether Tier II interventions, or small-group instruction, is more effective than Tier III interventions, or one-to-one instruction.

One piece of research that addressed this issue was a 2010 study conducted by Vaughn, Wanzek, Wexler, Barth, and Cirino that investigated the effects of a yearlong secondary intervention varying group size with seventh and eighth-graders with reading difficulties. Struggling readers were identified based on their performance on a state accountability test which evaluates reading comprehension. Struggling readers were identified as those who did not pass this test the previous school year. Once identified, they were randomly placed into one of the three conditions: research small-group treatment, research large-group treatment, or school treatment comparison. The researchers defined group size as 3-5 students for small-group, 10-15 for large-group treatment, and 10-20 for school comparison. Intervention instructors for both research treatments were fifteen certified teachers who were hired and trained by the research team.

The treatment intervention consisted of a yearlong three-phase plan. Phase I lasted approximately 7-8 weeks and emphasized word study and fluency. Phase II lasted between 17-18 weeks and focused on vocabulary and comprehension, while providing additional practice in the skills learned in Phase I. Finally, Phase III consisted of 8-10

weeks of instruction and continued the emphasis on vocabulary and comprehension, with more time spent on independent skills and strategies. Several pretest and posttest measures were utilized to analyze progress including the group reading assessment and diagnostic evaluation (GRADE), the Letter-Word Identification, Word Attack, and Passage Completion subtests of the Woodcock-Johnson III Tests of Achievement (WJ-III), and the test of sentence reading efficiency (TOSRE).

Overall, findings revealed few statistically significant results or clinically significant gains associated with group size or treatments. These results may seem unexpected, given the research that has shown that interventions can be highly effective. But it is important to consider that this population consisted of middle-school students, and much of the RTI research has focused on the primary elementary grades. In fact, the authors of this study point out two other large-scale intervention studies with older struggling readers that obtained similar results. The first was conducted by the National Center for Education Evaluation and Regional Assistance (Corrin et al., 2008). They provided reading comprehension interventions to struggling ninth-graders as a supplement to regular classroom instruction. Their overall findings revealed no statistically significant differences between treatment groups and the control group (Vaughn et al., 2010). A second study explored the relative effectiveness of intensive, 90 minute per day, reading interventions to high-school students with reading difficulties. For participating students reading below the fourth grade level, there were no statistically significant differences in any of the four treatment interventions provided; however, for students who were reading above the fourth grade level, but still demonstrating reading

difficulties, two of the four interventions produced significant gains for those students (Vaughn et al., 2010).

This body of studies implies that educators cannot generalize what will be effective for students of all ages. Tier II and Tier III interventions may be very effective if utilized with young readers, and if those interventions are implemented as soon as the child begins having difficulty. This data also shows the importance of prevention. These findings point out that older students with reading difficulties are much more challenging to remediate and will likely require longer-lasting, more intensive intervention. Prevention approaches that provide early intervention to at-risk students and continued intervention as needed, are essential for reducing the number of older at-risk readers (Fletcher, Lyon, Fuchs, & Barnes, 2006).

Small-group Instruction

Research has indicated that smaller group sizes are an important contributing factor to the success of reading interventions. Small group instruction is also a pivotal function in the RTI model, especially in Tier II. When done properly, small-group instruction can deliver the early intensive interventions at-risk students need to boost their performance so they can successfully re-enter the general classroom.

Students who are at risk for reading failure acquire reading skills more slowly than other children; nevertheless they must acquire the same skill set to become good readers. The main difference between appropriate instruction for all children and struggling readers is the manner in which the instruction is delivered. Specifically, instruction for children who have reading difficulties must be "more *explicit and*

comprehensive, more *intensive*, and more *supportive* than the instruction required by the majority of children" (Foorman & Torgeson, 2001, p. 206).

There are several advantages of small-group instruction, and a small-group environment allows for different reading strategies and activities that aren't normally feasible within a whole-group setting. A 2008 study (Fuchs, Compton, Fuchs, Bryant, & Davis, 2008) examined the effectiveness of small-group reading instruction on poor-performing first-graders. Their small groups consisted of between two and five students. The tutoring was conducted by research assistants four times per week, 45 minutes per session, for nine weeks. The tutoring sessions focused on sight word recognition, letter-sound recognition, decoding, echo reading, and choral reading. They found that the tutored students' growth was greater compared to controls. These tutored students made significant gains in word identification fluency, oral vocabulary, and rapid letter naming (Fuchs et al., 2008).

One-to-one tutoring

In a 2005 quasi-experimental study by Vadasy, Sanders, & Peyton, fifty-seven first-grade students scoring in the lowest quartile for reading skills received either classroom reading instruction or one of two treatments: tutoring in word study with text reading practice, or word study tutoring alone. The tutoring sessions were scheduled for 30 minutes, 4 days per week, from October through May. Effectiveness was evaluated through several pretest and post-test measures. Results indicated that tutored students in both treatments scored significantly higher at post-test on reading accuracy, reading comprehension, passage reading fluency, and spelling measures than non-tutored controls.

They also found that both treatment groups performed comparably—meaning that it didn't matter if they received the word study with text practice or word study tutoring alone. These findings help support the research findings of the benefits of explicit instruction for struggling students, including supplemental individual instruction provided by nonteacher tutors.

A meta-analysis conducted by Elbaum, Vaughn, Hughes, and Moody (2000) analyzed 29 studies that measured the effectiveness of supplemental, adult-instructed one-to-one reading interventions for elementary students at risk for reading failure. They also sought to compare the outcomes of one-to-one reading interventions with small-group interventions. Results indicated that students who received one-to-one instruction "performed at a level 2/5 of a standard deviation higher than the average level of the comparison group, corresponding to a move from the 50^{th} to the 65^{th} percentile on a standardized measure" (Elbaum et al., 2000, p.610). They also found that for students experiencing extreme reading difficulties the intervention would not likely move their performance into the average, or grade-level range, but it may be enough to help these students keep up with classroom instruction and to avoid academic failure (Elbaum et al., 2000).

With regard to the analysis of the studies that compared one-to-one intervention with small-group intervention the overall effect size was -0.12, indicating no advantage for the one-to-one intervention over small-group intervention. They also calculated the effect size of the comparison of the *same* interventions implemented at either the small-group or individual level. Once again they found no advantage for one-to-one over small-group instruction (Elbaum et al., 2000).

Differences between older and younger readers

Reading instruction in the primary grades focuses on the fundamentals of reading, but as students get older they are expected to be able to read for understanding. One issue is that most secondary-level content area teachers do not have extensive training in reading instruction, but improving literacy instruction in the content area classrooms is the first step in improving outcomes for older readers. Faggella-Luby, Ware, and Capozzoli (2009) discuss a variety of recommendations that target elements of instruction that provide relevant literacy skills to adolescents. First, teachers should plan to teach essential content and vocabulary. Students can be pre-taught essential background knowledge that they can apply when reading and discussing the material. Older students also need to be taught cognitive strategies and critical thinking skills which can enhance reading comprehension within content areas. Cognitive strategies such as summarizing, finding the main idea and using graphic organizers can be applied in several different subject areas, once taught and reinforced. Finally, secondary level teachers must find ways to tackle the considerable problem of low motivation and engagement. Teachers should work on building student confidence with reading the text by applying the other strategies suggested.

The effects of reading interventions on reading comprehension for older struggling readers were analyzed via meta-analysis of 29 intervention studies. They found that older, struggling readers could improve comprehension when provided targeted intervention in comprehension, multiple reading components, and word reading strategies. It may seem obvious that teaching reading comprehension practices will improve reading comprehension ability, but many struggling, older readers are not

provided effective instruction in this area because teachers assume they have already acquired these skills in previous grades. They also discovered that background knowledge, word knowledge, and use of strategies affect comprehension. So, for students who have difficulty with word reading, it is important to build these skills while also teaching comprehension (Edmonds, Vaughn, Wexler, Reutebach, & Cable, 2009).

Intervening with older, struggling readers. Older, struggling readers have likely been experiencing reading failure for years, and the problem becomes more pronounced as they move from grade to grade without the skills and fundamentals required in the upper-grades. They often cannot benefit from good classroom instruction similar to their peers due to the widening gap between their competence and expected level of performance. Much attention has been given to the importance of early intervention with young students to prevent reading failure; however until universal implementation is accomplished many older students struggle to read. In a study by Gaffney, Methven, & Bagdasarian (2002), 10 high-school age poor readers received 30 minutes of individual reading instruction three times per week. The tutoring sessions focused on reading expository texts that were at the students' reading level. Tutors helped students with word reading and reading fluency and comprehension strategies. They found that at the end of the semester, all tutored students made significant reading gains. Their results suggest that older, struggling readers are not all 'doomed' to reading failure. However, they may require more individualized and time-intensive intervention to see improvement (Gaffney et al., 2002).

Purpose of this Study

The purpose of this study was to evaluate the effect of individual reading instruction on reading comprehension as measured by DIBELS Retell Fluency at the Marshal University Graduate College Summer Enrichment Program. Data was also analyzed to see if individual instruction was more effective with struggling or non-struggling readers or upper or lower-grade participants. This study will contribute to the body of literature by examining the value of individual reading instruction to help determine if this type of intervention is effective in improving reading comprehension.

Hypotheses

Based on the research of this study, three hypotheses are proposed:

1. There will be a difference in Retell Fluency scores between students who received small-group reading instruction and those who received individual reading instruction in addition to small-group instruction.

2. There will be a significant interaction effect between instructional group and reading ability.

3. There will be a significant interaction effect between instructional group and age.

Chapter II

Method

Subjects

The subjects of this experiment consisted of 70 students from the 2010 Marshall University Summer Enrichment program. Subjects were coded based on three separate independent variables: individual reading instruction, or small group instruction only, struggling or nont-struggling reader, and age.

- Sixteen subjects received individual reading instruction in addition to small-group instruction, leaving 54 who received small-group reading instruction only. Hours of individual instruction ranged from 1 to 14 and hours of small-group instruction ranged from 5 to 20.
- Subjects were defined as 'struggling' or 'non-struggling' based on whether or not they had a mid-point Retell Fluency score. During the summer program, only students who were believed to be struggling readers were administered the mid-point DIBELS testing. Therefore, students who only had two scores can be seen as non-struggling readers. Eighteen subjects were identified as non-struggling readers and 52 were identified as struggling.
- Subjects were divided evenly into the upper-grade and lower-grade designations based on team placement and grade level.

Program Description

The 2010 MUGC Summer Enrichment program ran for five weeks, from June 22, 2010 through July 22, 2010. The program times were from 8:00 am to 12:30 pm, Monday through Thursday. Students were served breakfast and lunch each day. The program provided instructional guidance for students in grades kindergarten through twelve. It also served as a clinical field-based experience for graduate students' certification or licensure in school psychology, school counseling, reading education and special education. Students were assigned to one of seven classrooms based on grade. The Graduate College faculty appointed graduate students to each classroom. The average classroom consisted of two reading specialists, three or four educators, one or two counselors, and two school psychologists. Reading instruction occurred at the beginning of each day with a sixty minute reading block (Krieg, Meikamp, O'Keefe, & Stroebel, 2006).

Instrument

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) was created by the University of Oregon Center on Teaching and Learning. They are a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade. They are designed to be short (one minute) fluency measures used to regularly monitor the development of early literacy and early reading skills.

DIBELS were developed to measure recognized and empirically validated skills related to reading outcomes. Each measure has been thoroughly researched and demonstrated to be reliable and valid indicators of early literacy development and

predictive of later reading proficiency to aid in the early identification of students who are not progressing as expected. When used as recommended, the results can be used to evaluate individual student development as well as provide grade-level feedback toward validated instructional objectives ("Dibels oral reading", 2010).

Procedure

This study is a program evaluation of the Marshall University Graduate College Summer Enrichment Program. Archival data from the 2010 program year was reviewed. Data was collected by graduate student team members. During the program, all students were given the DIBELS Retell Fluency measure at the beginning and end of the program. Students identified as struggling readers also completed the measure at the program's mid-point. Students who did not have a final DIBELS score were not included in the study.

While the MUGCSEP does not strictly follow a three-tiered model, all students are screened in reading skills throughout the program. The screening and progress monitoring data is used to help place each student in the appropriate skill group for the daily reading block. This small-group instruction can be considered comparable to Tier II because the groups are small (generally no more than 5 students per group) and the instruction has been individualized to address their areas of weakness and lessons are taught according to each group's current skill level. These small groups are also flexible, meaning that students are regrouped throughout the program's duration based on each student's progress monitoring data. One important difference between this study and a

true RTI model is that for our program's purpose, students did not fail at Tier II before receiving Tier III services (individual reading instruction).

Chapter III

Results

A 2 (group) x 2 (ability) x 2 (age) between-subjects ANCOVA with repeated-measures was calculated to examine the main and interaction effects of individual tutoring, reading ability, and age on Retell Fluency scores, covarying out the effect of hours of treatment. There was a significant difference between the Retell Fluency measure of children who received small-group instruction only (Mean=36.28 and Standard Deviation=22.38) and those who received individual reading instruction in addition to small-group instruction (Mean=41.53 and Standard Deviation =30.79) ($F(2,39) = 7.01$, $p < .05$). Results failed to support the remaining hypotheses. No significant interaction effects occurred between the treatment groups and reading ability. Finally, the three-way interaction between group, ability, and age failed to support hypothesis three, which proposed that there would be a significant effect between instructional group and age.

However, Table 1 shows a contradictory main effect of struggling and non-struggling readers. The struggling readers' mean score was higher than that of the non-struggling readers. This difference was due to the fact that 75% of the older students were identified as struggling. Since older students have higher raw retell fluency scores than younger students, the scores of the older struggling students increased the struggling readers' average.

Table 1

Retell Fluency Means and Standard Deviations

	Mean	SD
Small-Group Only (n=16)	36.28	22.38
Individual Tutoring Added (n=54)	41.53	30.79
Struggling Reader (n=52)	42.89	23.14
Non-Struggling Reader (n=18)	38.73	15.71
Younger (n=35)	30.33	20
Older (n=35)	47.48	39.83

Chapter IV

Discussion

The findings in this program evaluation suggest that individual reading instruction improved reading comprehension performance as measured by DIBELS Retell Fluency. One purpose of this study was to loosely equate the program's small-group reading instruction literacy block to Tier II in the RTI model, and the individual reading instruction to Tier III. One of the questions this study sought to answer was whether Tier III interventions, which are even more individualized and time-intensive, are more effective than Tier II interventions, which focus on skill specific tasks in a small-group setting. Results of this study demonstrate the value of pull-out services. Because the analysis controlled for hours of treatment, it can be said that the improvement in reading comprehension as measured by DIBELS Retell Fluency was caused by the individual tutoring service. The intervention of individual reading instruction caused the effect—not the additional hours on task. These findings impact the way educators and researchers should view individual reading intervention.

In other similar studies, data was analyzed without controlling for hours of treatment, unlike this study, which utilized hours of treatment data as a covariate. A post hoc analysis of the data which removed the hours of treatment control showed that individual instruction still had a significant effect. This result shows that the individual tutoring did affect retell fluency performance.

These findings are consistent with those of the meta-analysis that evaluated the effectiveness of supplemental, adult-instructed one-to-one reading instruction. Elbaum et

al. (2000) discovered that students who received individual instruction significantly improved their performance on a standardized reading measure. These results imply that Tier III interventions can be worthwhile and effective for struggling readers, although these findings should be interpreted with caution. Several other pieces of research (Foorman & Torgeson, 2001; Fuchs et al., 2008; Vadasy et al., 2005;) have shown that small-group instruction is just as effective as one-on-one instruction. What is most important is the actively engaged time with explicit instruction in the student's specific areas of weakness.

The data was also analyzed to compare struggling readers with non-struggling readers. Results indicated that there was not a significant difference between their retell fluency scores. Although students were identified as struggling or non-struggling, it didn't necessarily affect the reading instruction they received. Students were selected for individual tutoring before the literacy instructors decided who was struggling or not. But, each student's performance on the reading assessments was evaluated by the team members to help place students in the appropriate groups in the literacy block. So, all students received reading instruction tailored to their current reading ability and specific strengths and weaknesses. As discussed by Foorman & Torgeson (2001), an important distinction between instruction for struggling and non-struggling readers is that struggling readers need more explicit, comprehensive, intensive, and supportive instruction. The struggling readers in this study did not receive additional support, unless they were chosen for one-on-one reading instruction.

The lack of significant interaction effects shows that combinations of age and reading ability did not affect comprehension gains. It is especially not surprising to find

that older, struggling readers did not make significant gains. Older, struggling readers appear to be a particularly difficult group to help. Older readers are expected to have mastered the foundations of reading and the majority of the reading done at the secondary level is reading for information and reading to learn about new concepts. If these older, struggling readers cannot read and comprehend the classroom text, they understandably will not be able to keep up with their peers in class.

Limitations

There are several limitations to this study. Students were labeled as 'struggling' and 'non-struggling' solely by the discretion of the literacy instructors in each team. They decided who would be administered the mid-point benchmark (and therefore categorized as a struggling reader) and who was deemed to be a non-struggling reader. Another issue with this variable is that there were many more (52) struggling readers than non-struggling readers (18), and 75% of the older students were identified as struggling. One reason that the program has more struggling older readers is that several older students are attending the summer program in order to avoid retention. The younger students often attend because they enjoy school or because their parents don't want them to regress over the summer months. With regard to the students who received individual reading instruction, 15 out of 16 (94%) were identified as struggling. These disproportionalities limit the generalizability of the findings. To correct this issue, more non-struggling readers should receive individual reading instruction. This study's definition of Tier III is different than what's discussed in the literature. As previously stated, our students did not fail to respond to intervention at the Tier II level, before receiving the more intensive individual reading instruction at the Tier III level.

Another limitation of this study is the geographic restriction. All of the students reside in the same community in West Virginia. The use of archival data collected by others brings up issues of the accuracy of the data and limits the amount of available data. The DIBELS assessments were administered by several literacy instructors, and the same instructors did not necessarily give all three administrations. As discussed by Bellinger & DiPerna (2011), the DIBELS Retell Fluency subtest is somewhat difficult to score and there are problems with a lack of reliability and inter-rater consistency. Different examiners often score the same responses quite differently.

If this study were to be replicated in the future, researchers should address the confounding variable of age and ability group. As previously discussed, the majority of older participants in the program are struggling readers. Researchers should control for age by making it a covariate in the analysis. The DIBELS Retell Fluency subtest should be further examined by comparing it with more comprehensive measures of reading comprehension, such as the Gray Oral Reading Test—Fourth Edition (GORT 4), Group Reading Assessment and Diagnostic Evaluation (GRADE), and the Woodcock Johnson Achievement Test—3rd Edition (WJ-III) Reading Comprehension subtest.

Recommendations

Additional research should be conducted that evaluates the effectiveness of Tier III over Tier II interventions alone. With the ever increasing popularity and implementation of RTI across the country, it will be critically important to know if it is time and cost effective. Even more important than that is the question of whether RTI will ultimately decrease the number of students who are identified with a specific

learning disability. This study also serves as a reminder that what works for younger readers may not be effective for older students and findings cannot be generalized to imply that there is one best way to teach and help all students, of all ages, and all ability levels. Early identification and intervention in reading problems is paramount. Catching problems early is one of the best ways to prevent reading problems and can help save many young readers from reading failure later on.

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